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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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07/07/2006

Arno Schubert

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EXAMINER

BROOKS, JERRY L.

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,653	Applicant(s) SCHUBERT ET AL.	
	Examiner JERRY BROOKS	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/15/2007, 07/07/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 recites the limitation "said side" in line 3. There is insufficient antecedent basis for this limitation in the claim. For the purpose of examination, examiner has interpreted "said side" to "a side".

Claim 10 recites the limitation "the general direction" in line 4. There is insufficient antecedent basis for this limitation in the claim. For the purpose of examination, examiner has interpreted "the general direction" to "a general direction".

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 8 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Mitsutake (JP 02153338 A).

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With respect to claim 1, Mitsutake discloses projection display device comprising:

means of projecting an image (11 and 12) onto a screen (b1) having an output axis called a main axis (the main axis is horizontal and perpendicular to the plane defined by the optical plate b1(see line just below the theta in fig.1)), the screen (b1 and 15) comprising at least one optical plate (b1 and see fig.4), wherein characterized in that the optical plate (see fig.4) comprises:

on a first side (side of 1, a first set of optical elements (see prismatic elements on 21) designed to bend rays received from said image projection means into a beam of rays (see fig.4 wherein the rays incident on 21 are bent) that are essentially parallel to a first direction in a plane containing the main axis (the rays inside the optical plate are essentially parallel to a first direction as defined by the rays as lie in the plane of the main axis discussed above), on a second side (22), a second set of prismatic elements (see prismatic elements on 22) with identical section or a holographic device for bending said beam (see side 22 with an identical holographic device) in a second direction different (the second direction as defined by light exiting the optical plate) from the first direction (see fig.4 wherein the first direction is different from the second direction) .

With respect to claim 2, Mitsutake discloses projection display device comprising the device as claimed in claim 1, wherein the second side comprises a second set of prismatic elements with identical section (see second side (22) with an identical section), at least some of the prismatic elements (see fig.4)

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comprising a first side (21) having an orientation such that the rays in the first direction (a first direction as defined by the rays as lie in the plane of the main axis discussed above) are refracted in the second direction (the second direction as defined by light exiting the optical plate).

With respect to claim 3, Mitsutake discloses the device as claimed in claim 2, wherein at least some of the prismatic elements (the prismatic elements on side 22) comprise a second side having a side that is essentially parallel to a side of the first optical element in said plane (the bases of the triangles of the prismatic elements (a second side) is essentially parallel to a side (base of the triangles of the prismatic elements of the first side) the first optical element in said plane 21 b).

With respect to claim 4, Mitsutake discloses the device as claimed in claim 1, wherein the second side includes a holographic device (see the holographic device of 22) to bend the beam in the second direction (the second direction as defined by light exiting the optical plate).

With respect to claim 6, Mitsutake discloses the device as claimed in claim 1, wherein the optical elements (the optical elements of 22 and 21) are designed to bend the rays from the source by refraction (see fig.4).

With respect to claim 8, Mitsutake discloses the device as claimed in claim 1, wherein in that the first set of optical elements (21) is designed to bend rays

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received from projection means into a beam of rays forming an angle less than or equal to 3° with the first direction (the first direction as defined by the rays inside the optical plate of fig.4 is parallel to the bent rays received from the projection mean and thus the bent ray for an angle less than 3 degrees).

With respect to claim 10, Mitsutake discloses the display device as claimed in claim 1, wherein characterized in that the projection means (11 and 12) are such that the rays (see the rays of fig.1) are received by the optical plate (see b1) with orientations (see the orientation of the incident rays with respect to theta) relative to the general direction of the optical plate varying over a continuous range of non-zero orientations relative to the main axis (see the rays of fig.1 wherein they are incident on the surface of the optical plate at non zero orientations after leaving plate 14 which disperses the light over a continuous range) and in which the first direction (as defined by the light ray inside the optical element) corresponds to one of the orientations of said continuous range(see fig.4, the first direction corresponds the entering light beam).

With respect to claim 11, Mitsutake discloses an optical plate (see b1) for projection device comprising image projection means (11 and 12) having an output axis called a main axis (the main axis is horizontal and perpendicular to the plane defined by the optical plate b1(see line just below the theta in fig.1) as claimed in claim 1, wherein characterized in that said plate comprises (see fig.4), on a first side (21), on a first side (side of 1, a first set of optical elements (see

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prismatic elements on 21) designed to bend rays received from said image projection means into a beam of rays (see fig.4 wherein the rays incident on 21 are bent) that are essentially parallel to a first direction in a plane containing the main axis (the rays inside the optical plate are essentially parallel to a first direction as defined by the rays as lie in the plane of the main axis discussed above), on a second side (22), a second set of prismatic elements (see prismatic elements on 22) with identical section or a holographic device for bending said beam (see side 22 with an identical holographic device) in a second direction different (the second direction as defined by light exiting the optical plate) from the first direction (see fig.4 wherein the first direction is different from the second direction) .

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsutake (JP 02153338 A).

With respect to claim 7, Mitsutake discloses the device as claimed in claim 1, but does not disclose in the embodiment of fig.4 wherein characterized in that the

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optical elements each include a side designed to reflect the rays from the source in the first direction.

Mitsutake discloses in the embodiment of fig.5 an optical plate (fig.5) wherein characterized in that the optical elements (26) each include a side (side that reflects rayd1) designed to reflect the rays from the source in the first direction (the ray from the source that moves in the first direction is reflected by a side of the optical element see fig.5).

It would have been obvious to one of ordinary skill at the time of invention to modify the optical elements of Mitsutake's embodiment in fig.4 with the optical elements of Mitsutake's embodiment in fig.5 to improve image quality.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsutake (JP 02153338 A) in view of Van Breenmen (4,482,206).

With respect to claim 5, Mitsutake discloses the device as claimed in claims 1, discloses wherein the second direction is directed essentially in line with the main axis (see fig.4 as discussed above) but does not disclose wherein said plate has symmetry of revolution about the main axis (the optical plate is a circular Fresnel lens and therefore has an axis of symmetry (see fig.1, 10 to see what is meant by circular Fresnel lens) about the main axis .

Van Breenmen discloses an optical plate (fig.5) wherein said plate has symmetry of revolution about the main axis (the optical plate is a circular Fresnel lens and therefore has an axis of symmetry (see fig.1, 10 to see what is meant by circular Fresnel lens) about the main axis in which the second direction is

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directed essentially in line with the main axis (the main axis is horizontal and perpendicular to the plane defined by the optical plate; also see fig.5 wherein the second direction is disclosed by the light beam in the optical plate of fig.5).

It would have been obvious at the time of invention to one of ordinary skill in the art to modify the optical plate of Mitsutake with the disclosure of Breenmen to improve the quality of the image.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsutake (JP 02153338 A) in view Mitsutake et al. (5,208,620).

With respect to claim 1, Mitsutake discloses the device as claimed in claims 1, but does not disclose wherein characterized in that the second direction forms an angle greater than or equal to 10° with the first direction.

Mitsutake (5,208,620) discloses a optical plate wherein characterized in that the second direction (light exiting optical plate fig.3b) forms an angle greater than or equal to 10° with the first direction (light inside optical plate fig.3b forms an angle greater 10 degrees with light inside the plate).

It would have been obvious at the time of invention to modify the optical plate of Mitsutake with the optical plate of Mitsutake et al. (5,208,620) to improve the image quality of Mitsutake's optical plate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERRY BROOKS whose telephone number is (571)270-5711. The examiner can normally be reached on Monday-Friday, 9 a.m.- 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JERRY BROOKS/
Examiner, Art Unit 2851

/William C. Dowling/
Primary Examiner, Art Unit 2851